

STEERING HANDLE OF A VEHICLE

BACKGROUND AND SUMMARY OF THE INVENTION

[0001] The invention relates to a steering handle of a vehicle with a supporting structure which is mounted such that it can be rotated about a rotational axis and at the ends of which a grip element, for a hand of a driver, which is formed in a manner which is angled away, is provided. The grip element is formed in a manner which can be rotated with respect to the supporting structure.

[0002] In addition to JP-2004-352124 A, reference is made, in particular, to DE 10 2016 225 452 A1 with respect to the prior art.

[0003] Within the context of the development of at least partially autonomously driving double-track motor vehicles, the development of novel steering handles is also envisaged, with the aid of which a driver can steer the vehicle, that is to say can predefine or set its driving direction, in a non-automated driving mode which is still available. The steering wheels which have been used for this purpose up to now namely require a relatively large amount of installation space which might be used for other purposes at any rate when the vehicle is driving autonomously. In addition to a displacement of steering wheels during autonomous driving, novel steering handles are therefore also being researched which require less installation space at least in an autonomous driving state, in which the steering handle of the vehicle remains substantially in a neutral position which corresponds to driving operation controlled by a driver of driving straight ahead of the vehicle, even when driving around bends.

[0004] For this purpose, a steering handle has already been proposed, it being possible for what is known as the supporting structure here, which lies practically horizontally in the vehicle interior in said neutral position of the steering handle and is therefore called a transverse element in the closest prior art which was mentioned at the outset, to be of a very wide variety of designs. By way of gripping and suitable guiding of at least one grip element which is provided or attached in the end region of the supporting structure, the driver can rotate the supporting structure or steering handle about its rotational axis during non-autonomous driving operation. An electric motor drive apparatus for rotating the grip element has also already been proposed in the prior art, it also being possible, as an alternative, for a suitable mechanism to be provided, for example an endless flexible drive mechanism for rotating a grip element.

[0005] It is intended to be indicated here how further installation space can be gained by way of a steering handle at least in defined operating states.

[0006] This object is achieved by way of the features of the independent patent claim, which is characterized in that the two grip elements are positioned in at least one defined state of the vehicle by way of an actuating apparatus such that sections of the grip elements which are provided for gripping by way of the hands of the driver lie on one line, the free ends of said sections facing one another.

[0007] In one preferred embodiment, at least approximately L-shaped grip elements are provided, the limb of which, which is oriented at least approximately horizontally in the neutral position of the steering handle, is rotatably fastened by way of its end section which is closer to the rotational axis to the supporting structure which is likewise

oriented horizontally in the neutral position of the steering handle, and a limb which is adjacent with respect to the other end of said horizontal limb and is oriented at least approximately vertically being configured or provided as a section for gripping by way of a hand of the driver.

[0008] The latter is also shown by the exemplary embodiment which is explained in the following text and is illustrated in the appended figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 shows a top view of the steering handle according to an embodiment of the invention in the neutral position, that is to say during driving straight ahead of the vehicle, if the latter is being controlled by a driver.

[0010] FIG. 2 shows the steering handle in a driving state, in which the vehicle is driving autonomously, that is to say without the assistance of the, or a, driver,

[0011] FIG. 3 shows the steering handle in a state, in which it is rotated by 90° in the clockwise direction starting from the state in accordance with FIG. 1.

[0012] FIG. 4 shows the steering handle in a state, in which it is rotated by 180° in the clockwise direction starting from the state in accordance with FIG. 1.

[0013] FIG. 5 shows the steering handle in a state, in which it is rotated by 270° in the clockwise direction starting from the state in accordance with FIG. 1.

DETAILED DESCRIPTION OF THE DRAWINGS

[0014] The designation 10 denotes a steering handle of a vehicle, for example of a passenger motor vehicle, behind which steering handle, as viewed from the driver, a dashboard with a display unit 20 (for example, for the driving speed and other information to be conveyed to the driver) is situated. A hand of the driver, namely his/her left hand, is denoted by way of the letter H.

[0015] The steering handle 10 consists of a supporting structure 11 which is mounted in the vehicle such that it can be rotated about a rotational axis D1 which runs perpendicularly with respect to the plane of the drawing in the illustrations of the figures. If the vehicle is driving straight ahead, the bar-shaped supporting structure 11 is horizontal, that is to say it forms, as it were, a horizontal transverse element. In each case one grip element 12a, 12b is arranged on the two end sections of the supporting structure 11, which grip element 12a, 12b for its part can be rotated with respect to the supporting structure 11, to be precise about a rotational axis D2a, D2b which runs at least approximately parallel to the rotational axis D1.

[0016] Each grip element 12a, 12b is angled away and/or is formed at least approximately in an L-shaped manner, and therefore consists of a first limb 121 and a second limb 122 which is substantially perpendicular with respect to the former. The latter is provided and configured to be gripped by the driver by way of his/her hand H, whereas the first limb 121 is articulated rotatably on the supporting structure 11 by way of its end section which faces away from the second limb 122. At least in the neutral position of the steering handle in accordance with FIG. 1, the first limbs 121 of the two grip elements 12a, 12b are oriented horizontally, with the result that the second limbs 122 lie in each case in a vertical plane. Therefore, a vertical plane is spoken of here because, as viewed in the vehicle, the rotational axis D1 is not oriented exactly, but rather merely approximately hori-